

STATE OF IOWA
DEPARTMENT OF COMMERCE
UTILITIES BOARD

IN RE: ELECTRIC DELIVERY SYSTEM RELIABILITY	DOCKET NO. NOI-00-4
---	---------------------

ORDER INITIATING INQUIRY

(Issued November 1, 2000)

In its inquiry into "Emerging Competition in the Electric Industry," Docket No. NOI-95-1, the Utilities Board (Board) adopted as its first principle that "[s]afe and reliable electric service must be maintained." In March 1999 the Board issued a reliability report in that docket which recommended certain steps be taken to improve reliability of the electric delivery system, which includes both transmission and distribution.

While electric restructuring legislation has not passed in Iowa, restructuring efforts in other states have highlighted concerns that competition-induced cost cutting may adversely affect reliability of the delivery system and quality of service. These concerns are also present in Iowa because emerging competition in the wholesale market, corporate mergers, and retail competition in other markets can provide incentives for utilities to cut costs. The Board believes that reliability rules may be necessary to ensure that emerging electric competition and other factors do

not diminish the quality of service Iowans have come to expect from their electric utilities.

In order to obtain information to develop any rules or other measures that are determined necessary to address reliability concerns, the Board will open an inquiry into electric delivery system reliability, identified as Docket No. NOI-00-4. The inquiry will focus on the issues outlined in the attachment to this order. This inquiry will not address bulk power adequacy or other supply issues. The information obtained in the inquiry may also be of assistance to the Governor's Energy Policy Task Force in developing Iowa's energy plan. Copies of this order will be mailed to all electric utilities in Iowa, the Office of Consumer Advocate Division of the Department of Justice, the Advisory Group from Docket No. NOI-95-1, and others involved in electric restructuring discussions during the past two years. The Board is interested in wide-ranging participation on these important issues, and those who are provided with a copy of this order are encouraged to forward this information to others who they believe may be interested in these issues.

I. NATURE OF THE PROCEEDINGS

A notice of inquiry is an informal process to educate participants on a particular issue or set of issues. An inquiry is commenced by Board order and a set of issues or questions is developed for consideration. The issues or questions outlined in the attachment to this notice are not intended to be exclusive, but will form the initial framework for the inquiry. The notice of inquiry is disseminated by mail and asks for

written comments. The inquiry is not directed at an individual utility or limited to a group of utilities, but is instead directed at any group, business, industry, or person who may be interested in the issues.

The Board will appoint Chancy Bittner of the Board's staff to be the inquiry manager. While the Board may take an active role in framing the issues, the inquiry manager will prepare an agenda and discussion topics, facilitate the work sessions, if any, and issue any reports. There may be one or more reports of the group and each will contain discussion of all aspects of the issues, including areas of controversy and consensus. The process is not intended to produce any specific kind of action but may result in a subsequent formal proceeding, such as a rule making. The process is one of collaboration and cooperation. Participation is voluntary. No transcripts of the meetings will be kept.

II. COMMUNICATIONS

All persons interested in participating in this notice of inquiry shall send e-mail or written confirmation of their intent to participate to the inquiry manager by November 20, 2000. Notice of participation shall include the following, if available: name of the participant/organization, contact person, mailing address, phone number, facsimile number, and e-mail address. If more than one person from any entity is planning to participate, the written confirmation shall include the names of all participants, but designate a single contact person. As soon as possible after November 20, 2000, all participants who sent a written confirmation will be provided

a copy of the service list. Updated lists will be available by contacting the inquiry manager or on the Board's web site, <http://www.state.is.us/iub>.

On or before December 8, 2000, all participants shall file responses to the questions contained in the attachment to this order. Some of the questions are directed only to certain entities; most are directed to all participants. All responses shall be filed as follows: 1) An original and one written copy, filed with the Board's Executive Secretary, 2) One copy, via e-mail, to the inquiry manager, and 3) One copy, via e-mail, to each participant on the service list. If a participant does not have an e-mail address, a copy is to be provided by mail or facsimile. All other communications regarding this inquiry are to be directed to the inquiry manager:

Chancy Bittner
Iowa Utilities Board
350 Maple Street
Des Moines, Iowa 50319-0069
Telephone: (515) 281-6928
Facsimile: (515) 281-5329
E-mail: cbittne@max.state.ia.us

After receipt of the comments, the inquiry manager will determine whether any additional procedures are necessary to complete the inquiry. Work sessions may be scheduled or additional comments on specific questions may be solicited. Participants will be notified of any subsequent procedures established.

Comments are solicited on the inquiry questions. The list is not exclusive and participants are invited to submit comments on any other issues or questions that they believe are relevant to this inquiry.

ORDERING CLAUSES

IT IS THEREFORE ORDERED:

An inquiry, identified as Docket No. NOI-00-4, is initiated concerning electric delivery system reliability.

UTILITIES BOARD

/s/ Allan T. Thoms

/s/ Susan J. Frye

ATTEST:

/s/ Raymond K. Vawter, Jr. /s/ Diane Munns
Executive Secretary

Dated at Des Moines, Iowa, this 1st day of November, 2000.

**Electric Delivery System Reliability
Docket No. NOI-00-4
List of issues and questions**

The purpose of this Attachment is to seek additional information to develop any rules or other measures that are determined necessary to address reliability concerns. Each issue includes a brief introduction followed by some introductory questions. Those persons interested in participating in the inquiry are asked to respond to these questions on or before December 8, 2000. A table of contents for these issues follows:

1. General Reliability Obligations/Applicability	1
2. Definitions	2
3. Interruptions Record-Keeping Requirements	2
4. Notification and Reporting	4
5. Annual Reliability and Service Quality Report	5
6. Minimum Service Level Values	8
7. Prompt Restoration Standards	9
8. Power Quality	9
9. Inspection and Maintenance	10
10. Vegetation Management Programs	11
11. Customer Satisfaction Surveys	11
12. Inquiries about Electric Reliability	12
13. Public Safety	12
14. Penalties/Incentives	12

Utility comments cited below came from responses to earlier questions that Board staff posed to the utilities as part of Docket No. NOI-95-1.

1. General Reliability Obligations/Applicability

Iowa Code § 476.1A exempts electric cooperatives (RECs) from rate regulation but makes them “subject to all other regulation and enforcement activities of the Board.” Therefore, the Board appears to have authority to impose reliability rules on RECs. However, Iowa Code § 476.1B explicitly states a municipally-owned utility “is not subject to regulation by the Board,” with a few exceptions including safety concerns.

- a. What reliability issues can, and should, apply uniformly to all electric utilities, and require uniform treatment by the Board? Explain.

- b. What reliability issues require different treatment due to size, resources, organizational structure, or other differing circumstances, including any differences in Board authority? Explain.

2. Definitions

The IEEE has recently proposed terms and definitions that “can be used to foster uniformity in the development of distribution service reliability indices, to identify factors which affect the indices, and to aid in consistent reporting practices among utilities.”¹ As such, their definitions and terms might be considered for possible inclusion in any reliability rules adopted by the Board. One might also consider the definitions used in other states’ reliability rules. In writing rules for reliability, definitions of terms will be important and will need to be addressed in detail.

- a. Should the definition of customers for reliability indices refer to a separately-metered electrical service point for which a separate bill is rendered, or should a customer who has a number of meters at a given location be counted as a single customer? Explain why.
- b. In its response to Docket No. INU-00-5, MidAmerican Energy Company (MEC) defines sustained interruptions as those greater than one minute. Is this a definition other utilities find acceptable? If not, what definition is preferable? Explain why.
- c. Are the definitions given to indices in the “IEEE1366, Trial Use Guide for Electric Power Distribution Reliability Indices,” acceptable? Explain why.

3. Interruptions Record-Keeping Requirements

Reliable service requires that service interruptions are infrequent and of short duration. While utilities traditionally have emphasized duration minimization, the growth in use of computers and other electronic devices makes frequency problems of increasing concern. Many commissions now require that utilities track and maintain detailed records on all service interruptions, both sustained and momentary. Some regulators opine that, once the utilities start collecting adequate data, subsequent tailoring of programs and monitoring is vastly improved.

The Illinois Commerce Commission requires utilities maintain records sufficient to determine a history of interruptions by each customer. Other states require

¹ Institute of Electrical and Electronics Engineers, Inc., “IEEE P1366, Trial Use Guide for Electric Power Distribution Reliability Indices,” 1998, p. 4.

tracking of interruption data on the circuit level or on a last protection device basis.

Outage Management Systems

Questions for MEC and Alliant Energy (ALT):

- a. Please provide the status of your automated outage management systems in Iowa and any other efforts to assess and assure reliability, including reports to management during 1999-2000. For instance:
 - Are all reliability systems online and able to track outage statistics in all operating areas and for all circuits?
 - If not, fully explain what further steps are required (e.g., data cleanup of recently completed Geographic Information Systems projects) and provide target dates of when operational functionality is expected.
- b. Explain the granularity of your automated outage management systems. To which of the following levels does your system enable you to track reliability:
 - Circuit?
 - Transformer?
 - Last protective device²?
 - Individual customer level?

If not to the individual customer level, provide a ballpark estimate of the time and expense of an effort to make such improvements.
- c. How many past years of interruptions data using the automated outage management system currently exist by operating areas within Iowa, detailing in-service dates for the outage management system in those areas? For ease of reference, please provide a map that visually demonstrates your written response.
- d. For ALT: Illinois³ requires a detailed recording of reliability data for Interstate Energy's Illinois properties. Explain what additional level of effort (if any) or additional outage management system enhancements would be required to accomplish the same for Interstate Energy in Iowa. For IES Utilities? Elaborate.

²The "last protection device" represents the last circuit breakers, reclosers, fuses, etc. that stand between the utility's system and the customers. Every protection device on a distribution circuit is the last protective device for some group of customers.

³ 83 Ill. Adm. Code Section 411:110 on Record-Keeping.

- e. For MEC: Illinois⁴ requires a detailed recording of reliability data for MEC's Illinois properties. Explain what additional level of effort (if any) or additional outage management system enhancements would be required to accomplish the same for MEC's Iowa properties.

General Questions

- f. For MEC and ALT: How many individual circuits exist in each Iowa operating area?⁵
- g. For MEC and ALT: Describe the present recording standards (if any) for momentary outages used by your utility in Iowa, including any standards for individual customers/groups of customers (whether through your own company, consultants, or affiliates)—for any reason (including, but not limited to, benchmarks in contracts) and the number of months and years of historical data collected on such standards. Detail any plans to shift to more exhaustive tracking?
- h. What is the current ability of rural electric cooperatives (RECs) to track and record momentary outages? Are there plans to shift to more exhaustive tracking? If so, what?
- i. What is the current ability of RECs to track circuit level data? What is the lowest level of detail that most RECs are able to collect? Do RECs have plans for system improvements to enhance the tracking of outages?

4. Notification and Reporting

Notification

Currently, 199 IAC 20.2(5)“c” and 20.7(13) provide for some notification and reporting of sustained interruptions.

- a. To what extent are current notification and reporting rules adequate, especially in context of enhancing reliability rules?

Major Event Reporting

Regulators and other public officials are interested in staying on top of storm restoration efforts during and following a major event. Many states require reporting a significant outage within a certain time after the outage happens.

⁴ Ibid.

⁵This information will help to determine whether it would be onerous to require a list of all circuits by each index as required in Wisconsin's PSC 113.0603.

Another type of recent growth in commission rules deals with “public events”—hour-by-hour reporting and coordination during major storms and events as one major focus point of new reliability regulation.

- b. To what extent should utilities augment current reporting practices to improve communications with regulators, public officials, and the general public regarding restoration efforts during and following major events?
- c. In the calculation of reliability indices like System Average Interruption Frequency Index (SAIFI) and others, should interruptions attributed to major storms and major catastrophic events be included in the calculation as done in Wisconsin⁶, or should major events be excluded in the calculation of indices? Explain why?

Emergency Operations Plan

A number of states⁷ require that each utility have a written emergency operating plan that governs its emergency operations, including a registry of critical loads, communication plan, and priorities established for restoration of service. Since cooperation among utilities may suffer as competition emerges, some states require utilities to plan and arrange in advance for obtaining extra resources to tackle restoration efforts following major events. In addition, typically an updated general description of the emergency plan must be on file at the commission with access to the full plan available to the commission and/or staff at the utility’s headquarters.

- d. Explain any currently existing emergency operations plans. Also explain the frequency and procedures for updates.
- e. Discuss the information that should be included in a plan if the Board required utilities to have an emergency operations plan.
- f. Discuss the pros and cons of requiring Iowa utilities to establish procedures to record and monitor response times for emergencies similar to that required in Wisconsin⁸.

5. Annual Reliability and Service Quality Report

“Service reliability” connotes a certain constancy of electric service. In other words, assuring reliability implies the need for electric utilities to meet performance standards over time. Among other things, this implies appropriate planning, investment, and employee levels over time. Annual reports provide

⁶ Wisconsin’s PSC 113.0601(2) and 113.0602(20).

⁷ For example, California, Ohio, Texas, and Washington.

⁸ Wisconsin’s PSC 113.0608.

accumulated information for all parties to monitor and assess reliability in the present and over time.

Reliability Indices

In response to Board staff questions posed to stakeholders in Docket No. NOI-95-1, MEC proposed using SAIFI, Customer Average Interruption Duration Index (CAIDI), and Customer Average Interruption Frequency Index ("CAIFI") for assessing system reliability. ALT acknowledged that most utilities calculate these three indices, but cautioned that comparison of these indices among utilities is inappropriate. Differences among utilities (in philosophy, policies, procedures, definitions, infrastructure, and technology) all impact the values of the indices. The most appropriate comparisons are between years for a given utility.

The March 1999 Board Staff report entitled, "Reliability: A Staff Analysis," (Docket No. NOI-95-1) recommended the Board adopt industry accepted indicators, such as SAIFI and CAIDI to monitor the performance and reliability of transmission and distribution systems. This should also include momentary indicators.

- a. Looking at IEEE P1366, "Trial Use Guide for Electric Power Distribution Reliability Indices," which of the *sustained* interruption indices (Section 4.2) should be reported in order to allow adequate assessment and tracking of reliability for systems and operating areas? Explain your answer.
- b. Looking at IEEE P1366, "Trial Use Guide for Electric Power Distribution Reliability Indices," which of the *momentary* interruption indices (Section 4.3) should be reported in order to allow adequate assessment and tracking of reliability for systems and operating areas? Explain your answer.
- c. What, if any, additional information should be filed with index values to place these values in context with company policies, procedures, technology, etc.?
- d. Explain the pros and cons, including additional resources required (if any) to calculate separate index values for rural areas and non-rural areas? Transmission and distribution facilities?

Worst Circuits

Many state commissions⁹ require the reporting of worst performing circuits and an explanation of plans for improvement. Since utilities may have large enough distribution systems that local reliability issues may be hidden in the overall reliability measurements of the utility, this requirement allows the commission to address local reliability issues. In NOI-95-1, the Iowa Association of Municipal Utilities argued that such a list of poorly performing circuits is a necessary tool for the Board to enforce performance standards. However, ALT was concerned that such a list would be misunderstood by the public and stated it is not reasonable or possible to provide an accurate list. In addition, MEC argued that such a list may “not be indicative of a situation requiring remedial action.” MEC and ALT warned that circuit-by-circuit comparisons are inappropriate due to the many differences that exist among circuits.

- e. Discuss the pros and cons of using circuit-level measurements for the purpose of tracking the deterioration or improvement in the performance of specific circuits over time?
- f. Discuss alternatives to circuit-level measurements that would provide a reasonable level of information about local reliability issues.
- g. If electric utilities were required to file circuit level data, what supplementary information should be filed to provide the Board with a better understanding of circuit performance?
- h. If reporting on worst performing circuits is required, should circuits with less than a given level of customers (e.g., ten) be exempted from reporting for worst performing circuits? Why or why not?

Other Reporting

Many states require utilities to file an annual report on various reliability matters. For example, Illinois requires an annual report¹⁰ to include: (1) a plan for future investment and reliability improvements, (2) feedback on implementation of prior plans, (3) number and duration of interruptions, (4) report on age, current condition, reliability and performance of transmission and distribution, (5) expenditures for transmission construction and maintenance, (6) expenditures for distribution construction and maintenance, (7) results of customer surveys, (8) reliability indices, (9) list of worst-performing circuits, and (10) various other disclosures, overviews and analyses.

⁹ For example, Illinois, New Jersey, New York, Ohio, Oregon, Texas, and Wisconsin all require reporting of individual circuits.

¹⁰ 83 Ill. Adm. Code Section 411:120.

- i. How difficult would it be for RECs to file a comprehensive annual reliability report similar to that required in Illinois of its regulated utilities? Please be specific as to what is easy, what is possible, and what is difficult. Explain.
- j. If RECs are required to file an annual reliability and service quality report, explain how it might differ from that required of investor-owned utilities?
- k. Explain the difficulties for utilities to file annual reports on age, current condition, reliability and performance of electric transmission and distribution facilities?

6. Minimum Service Level Values

Many states have some sort of minimum service level values; however, there is a wide diversity on the process for establishing the value, the type of value, and the basis used to calculate the values. There is also diversity among states on the enforcement mechanisms (see penalties/incentives section below) and the time period over which they would be phased in. A number of questions arise for policy makers in addressing this issue.

- a. As a first step toward possibly establishing required minimum service levels, discuss the merits in having utilities establish their own target minimum reliability index performance levels? What considerations should the utilities take into account when setting these levels?
- b. If the Board required utilities to have minimum reliability levels for indices or other measures for systems and operating regions,
 - (1) Discuss the merits in having a minimum reliability level for each prescribed index versus an average of all required indices?
 - (2) Upon what type of rationale and data should the minimum reliability levels be based?
 - (3) Discuss your expectations about the procedures to establish the levels.
 - Rulemaking?
 - Company-initiated filings?
 - In this inquiry's working groups?
- c. If the Board established individual customer-based standards, discuss the pros and cons of having them take the form of targets like those adopted in Illinois¹¹. A different type of customer standard? Explain.

¹¹ 83 Ill. Adm. Code Section 411:140(b)“4”.

- d. Assuming reliability standards for circuits were adopted, discuss the advantages and disadvantages to each of the following measures.
- (1) Threshold standard—e.g., requires that each utility strive to maintain index values (like SAIDI, SAIFI, etc.) below certain threshold levels for each circuit.
 - (2) No repeat standard—e.g., requires that a utility take steps to assure that circuit that ranks within the worst 10 percent of the utility's circuits (based on reliability indices) will not be allowed to repeat among the worst 10 percent in the following year.
 - (3) Limited variability standard—e.g., requires that a poor performing circuit shall not have a reliability index value that is 2, or perhaps 3, times greater than the average of all circuits.
 - (4) No indices standard—e.g., requires reporting, but no explicit standards, of reliability indices for each circuit (e.g. SAIDI, SAIFI).
 - (5) Some other alternative. Explain.

7. Prompt Restoration Standards

199 IAC 20.7(11) provides that “(e)ach utility shall make reasonable efforts to avoid interruptions of service but when interruptions occur, service shall be reestablished within the shortest time practicable, consistent with safety.”

- a. Is there any need for rules on prompt restoration standards beyond the current rules in 199 IAC 20.7(11)? If yes, explain what is needed and why?

8. Power Quality

Power quality is an important technical issue. Power quality problems can include momentary disturbances; high or low voltage; voltage spikes and transients; flickers and voltage sags, surges and temporary overvoltages; and noise. In addition, the concern about harmonics has been growing in recent years due to the increased number of non-linear loads on utility power systems and increased customer use of computers.

199 IAC 20.7(1) through (10) covers standards for frequency, voltage limits retail, voltage balance, voltage limits service for resale, exceptions to voltage requirements, voltage surveys and records, voltage measurements, and

equipment for voltage measurements. The issue here is whether these rules are adequate for end-use consumers. Power quality problems are especially troublesome to sensitive manufacturing equipment such as computers, motors, heating elements, adjustable speed motor drives and programmable logic controllers.

While recognizing the importance of power quality issues, commissions seem to be moving slowly in this area—perhaps because of the lack of data and the technical nature of the problems. However, a number of commissions do require that utilities maintain, and maybe file, power quality programs that include objectives and procedures for prompt response to customer reports of utility-related power quality problems. At minimum, the programs strive to prevent, mitigate or resolve power quality problems within the utilities' control, to the extent practical.

- a. Discuss the need for power quality rules beyond the current rules in 199 IAC 20.7?
- b. Discuss the pros and cons of having the Board require, as was done in Texas¹², that utilities implement to the extent reasonably practicable and in conformance with prudent operation the practices outlined in the following two standards:
 - (1) IEEE Standard 1159-1995, *IEEE Recommended Practice for Monitoring Electric Power Quality*, or any successor IEEE standard.
 - (2) IEEE Standards 519-1992, *IEEE Recommended Practices and Requirements for Harmonic Control in Electric Power Systems*, or any successor IEEE standard.

9. Inspection and Maintenance

The Board has adopted inspection and maintenance plan requirements for electric utilities, including RECs and municipals, in 199 IAC 25, the Iowa Electrical Safety Code (IESC). As part of those rules, the Board requires that electrical facilities comply with ANSI C2-1997, the National Electrical Safety Code (NESC), which is adopted with minor modifications. In addition, these rules require that each electric utility have an Inspection and Maintenance Plan, and specify record-keeping requirements that facilitate Board monitoring.

In maintaining physical facilities, it appears that safety and reliability considerations will often overlap. For example, a downed electric line represents both a safety hazard and a probable outage. It follows that inspection and maintenance activities that enhance safety will often also enhance reliability.

¹² Texas Admin. Code, Title 16, Chapter 25, Section 51.

- a. Discuss any improvements that could be made to existing inspection and maintenance rules in 199 IAC 25.3, ones that would enhance both safety and reliability, as well as enhance the cost effectiveness of the inspection process.

10. Vegetation Management Programs

Trees and branches are often a major factor in service outages, including those sometimes described as caused by storms/severe weather. In other states, concern that increased competitive pressures will lead to reduced expenditures for preventive maintenance, such as tree trimming, has led to the adoption of rules for tree trimming. Section 218 of the NESC suggests, but does not require, trimming of trees that may interfere with conductors.

- a. Discuss the pros and cons of having tree trimming rules beyond the current electric safety standards in ANSI C2 – 1997 “NESC” Section 218 and beyond the current rules in 199 IAC 25.2?
- b. Discuss the procedures the Board might follow if it allowed individual utilities to self-nominate tree clearing program standards and then how the Board might hold a utility accountable for performance to those standards.

11. Customer Satisfaction Surveys

A number of states use customer satisfaction surveys to better monitor service quality—in this case the customer’s perception of service quality.

- a. If the Board deemed the requirement for customer satisfaction surveys appropriate, should each utility direct its own survey, subject to Board approval, or should surveys be conducted on a state-wide basis by a neutral third party?
- b. If the Board requires that utilities have regular quantitative assessments of customer satisfactions via surveys like that required by Illinois¹³, should utilities besides the investor-owned electric utilities be required to do this? Why or why not?
- c. For MEC and ALT: Provide a copy of the most recent surveys used by you in other states. Explain how it was generated and by whom?

¹³ 83 Ill. Adm. Code Section 411:150.

- d. For MEC and ALT: Does your company use customer surveys in Iowa? If yes, how are they generated and by whom? How frequently employed? Provide a summary of the results of the last five years.
- e. For utilities: Does your company track the time that the utility takes to install and energize service to a customer site once it is ready to receive service? If not, how difficult would this be?

12. *Inquiries about Electric Reliability*

At least one state, Illinois, requires utilities to issue a report within thirty days upon customer request of all interruptions the customer has experienced at the customer's current address during the most recent five years. Oregon allows customers to request an electric report about the service reliability for any circuit or last protection device.

- a. Should this type of data be available upon request, and at what cost to customers?
- b. For Munis and RECs only¹⁴: Can your companies provide interruption data by last protection device? By circuit level? By customer level?

13. *Public Safety*

199 IAC 20.8(1) requires that utilities adopt and execute a safety program to reduce the hazards between its energized facilities and its employees and the public. Subsequent to an existing accident, 199 IAC 20.8(2) requires that utilities shall determine suitable means of preventing future accidents. In addition, 199 IAC 25 provides rules on the Iowa Electric Safety Code.

- a. Is there a need for safety rules beyond the current rules in 199 IAC 20.8 and 199 IAC 25? If so, what is the need and why?

14. *Penalties/Incentives*

This issue primarily addresses what enforcement actions might be used to maintain or improve reliability performance and to assure customers are receiving reasonably adequate service. This subject includes everything from penalties for failure of performance to meet minimum levels (as broached in the issue on minimum service level values above) to specifying civil penalties for violations of various reliability provisions. In addition, the overall question of what

¹⁴ MEC and ALT were asked for this information in Section 3 above.

general mechanisms and incentives support reasonable reliability levels is relevant.

Currently, no explicit standards regarding reliability appear to exist within either the Iowa Code or Board rules. However, the Board does have authority under Iowa Code § 476.51, the civil penalty provision, to fine a public utility that violates the law, Board rules, or Board orders.

- a. What *general* mechanisms and incentives in support of reasonable reliability levels should be considered by the Board?
- b. If reliability standards are adopted for *system* and *operating area* performances, what type of enforcement mechanisms should be used, when should they take effect, and how would they be enforced?
- c. If reliability standards are adopted for *circuit* performances, what type of enforcement mechanisms should be used, when should they take effect, and how would they be enforced?
- d. If reliability standards are adopted for *customer-specific* reliability performances, what type of enforcement mechanisms should be used, when should they take effect, and how would they be enforced?